

REMARKS

I. Introduction

With the cancellation herein without prejudice of claim 18, claims 11 to 17, 19 and 20 are currently pending in the present application, since claims 1 to 10 were previously cancelled. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration of the present application is respectfully requested.

II. Rejection of Claims 11 to 14, 16, 19, and 20 Under 35 U.S.C. § 103

Claims 11 to 14, 16, 19, and 20 were rejected under 35 U.S.C. 103(a) as unpatentable over the combination of U.S. Patent Application Publication No. 2001/0010424 (the “Osmer” reference) and Denuto et al., “LIN Bus and its Potential for use in Distributed Multiplex Applications” (the “Denuto” reference). It is respectfully submitted that the combination of the “Osmer” and “Denuto” references does not render the present claims unpatentable, and the rejection should be withdrawn, for the reasons stated below.

To reject a claim under 35 U.S.C. § 103(a), the Office bears the initial burden of presenting a *prima facie* case of obviousness. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish *prima facie* obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). As clearly indicated by the Supreme Court, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. *See KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007). In this regard, the Supreme Court further noted that “rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id.*, at 1396. Second, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim features. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

Regarding claim 11, the Office Action admits that the “Osmer” reference does not disclose a single wire bus and refers to the “Denuto” reference as assertedly disclosing this feature. The Office Action alleges that “[i]t would have been obvious to one of ordinary

skill in the art to use a single wire bus since this reduces the number of wires needed in the system.” However, as explained in Applicant’s Response dated December 10, 2007, prior art references must be considered as a whole, including portions that teach away from the claimed subject matter. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540 (Fed. Cir. 1983). The “Osmer” reference relates to an analog signal-based system and, thus, cannot be readily combined with the single wire multiplexing approach of the “Denuto” reference, which refers to a bus-system applicable only to digital signals. Accordingly, one skilled in the art would not modify the system of the “Osmer” reference to include the bus system of the “Denuto” reference.

In the “Response to Arguments” section, the Final Office Action asserts that “[n]owhere does Osmer specify the sensors are analog or digital.” Final Office Action, page 5. While the “Osmer” reference does not explicitly state that the sensors are analog, it is clear that they are analog, and not digital. In this regard, the “Osmer” reference states that a “force is measured by resistors 60 as an electrical signal that changes with the occupants weight and is transmitted over a wire harness 58 to air bag controller 36. The voltage level of each resistor can be correlated to a specific weight at each sensor location.” See the “Osmer” reference, page 3, lines 9 to 14 and Fig. 1. Thus, the “Osmer” reference clearly describes an analog system inconsistent with the use of digital sensors.

In the “Response to Arguments” section, the Final Office Action further asserts that “even if the sensors are analog, it is implicit that there would be an analog to digital converter so that analog signals can be interpreted in the controller.” Applicant respectfully disagrees. There is no implicit suggestion in the “Osmer” reference that such a converter is needed for the controller to interpret the signals or that the controller inputs or outputs digital signals. Indeed, the “Osmer” reference is completely silent with respect to the inclusion of such a converter, suggesting that an analog to digital converter is unnecessary for the system of the “Osmer” reference to work. Indeed, the “Osmer” reference’s silence regarding such converters considered in light of that the sensors in the “Osmer” reference output an analog voltage signal corresponding to the weight of the seat occupant, suggests that the system of the “Osmer” reference encompasses the use of analog devices in the controller to combine the analog signals from the sensors.

Further, Applicant has amended claim 11 to include the feature of claim 14 as previously presented of “a bus communications arrangement including a toroidal core store that stores a measured value for the weight measurement.” The Office Action asserts that toroidal core stores are well known in the art. Applicant respectfully traverses all statements

of official notice and allegations of well-known fact and respectfully request published information and/or affidavits under 37 C.F.R. § 1.104(d)(2) to support the statements of official notice and allegations of well-known fact. Further, the Office Action provides no motivation or reasoning for the proposed modification of the system of the “Osmer” reference to include this feature.

For all of the foregoing reasons, it is respectfully submitted that the combination of the “Osmer” and “Denuto” references does not disclose or suggest all of the features recited in claim 11, so that the combination of the “Osmer” and “Denuto” references does not render unpatentable claim 11.

Claims 12 to 14, and 16 ultimately depend from claim 11 and are therefore allowable for at least the same reasons as claim 12. *In re Fine*, supra (any dependent claim that depends from a non-obvious independent claim is non-obvious).

As further regards claim 14, claim 14 recites that “the connecting element includes an indicator to retrieve the measured value.” The Office Action does not address this feature. Indeed, it is respectfully submitted that the combination of the “Osmer” and “Denuto” reference does not disclose or suggest this feature. For this additional reason, it is respectfully submitted that the combination of the “Osmer” and “Denuto” references does not render unpatentable claim 14.

Withdrawal of this obviousness rejection of claims 11 to 14, and 16 is therefore respectfully requested.

III. Rejection of Claim 15 Under 35 U.S.C. § 103

Claim 15 was rejected under 35 U.S.C. 103(a) as unpatentable over the combination of the “Osmer” reference, the “Denuto” reference, and U.S. Patent Application Publication No. 2005/0172462 (the “Rudduck” reference). It is respectfully submitted that the combination of the “Osmer,” “Denuto,” and “Rudduck” references does not render claim 15 unpatentable, and the rejection should be withdrawn, for the reasons stated below.

Claim 15 depends from claim 11 and is therefore allowable for at least the same reasons set forth above in support of the patentability of claim 11, since the “Rudduck” reference does not correct the critical deficiencies noted above with respect to the “Osmer” and “Denuto” references.

Withdrawal of this obviousness rejection of claim 15 is therefore respectfully requested.

IV. Rejection of Claims 17 to 20 Under 35 U.S.C. § 103

Claims 17 to 20 were rejected under 35 U.S.C. 103(a) as unpatentable over the combination of the “Osmer” and “Rudduck” references. It is respectfully submitted that the combination of the “Osmer” and “Rudduck” references does not render the present claims unpatentable, and the rejection should be withdrawn, for the reasons stated below.

As an initial matter, claim 18 has been canceled herein without prejudice, thereby rendering moot the present rejection with respect to claim 18.

In the “Osmer” reference, all the sensors are scanned simultaneously by the controller to determine the proper airbag deployment. “At step 102, sensors 50A, B, C and D are scanned.” *See*, the “Osmer” reference, paragraph [0037] and Figure 5. There is no need for or benefit to using addressing because the analog data from the sensors is continuously available to the controller and no data is returned to the sensors from the controller. In the “Response to Arguments” section, the Office Action asserts that the “Osmer” reference does not specify that the sensors are analog. However, as explained in detail above, while the “Osmer” reference does not explicitly state that the sensors are analog, it is clear that they are analog, and not digital. The one-way continuous analog communication obviates the need for bus communications, making it unnecessary and unforeseeable to combine the “Osmer” reference with the “Rudduck” reference in the manner suggested by the Office Action.

Indeed, if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984). The “Osmer” reference relates generally to the use of sensors to determine the deployment of vehicle airbags. Airbags must deploy quickly in order to be effective in a vehicular accident, so that it is extremely important that sensor data in the “Osmer” reference be quickly relayed to the controller to effectuate timely deployment of a vehicle airbag. In this sense, the continuous, simultaneous analog scanning of the seat sensors in the “Osmer” reference provides a fast and efficient method of receiving sensor readings to determine whether an airbag should be deployed. Any additional steps that would slow or delay the transmittal of seat sensor data to the controller, such as including a method for addressing individual sensors as described in the “Rudduck” reference, would thus be counter-productive and render the system of the “Osmer” reference unsatisfactory for its intended purpose, so that the modification of the “Osmer” reference proposed by the Office Action would have been unforeseeable and must rely on improper hindsight reasoning based on Applicant’s disclosure,

In this regard, it is noted that the “Rudduck” reference indicates that its purpose is to “provide a system of fasteners which can be part of an array, which can be individually addressable and which can enable an orderly, predictable way of accessing replaceable components in assemblies.” *See* the “Rudduck” reference, paragraph [0006]. While the “Rudduck” reference goes on to provide an example of the use of such a system in an automobile, the example relates to use of individually addressable fasteners “in order to remove a radio unit from a motor vehicle.” *See id.* However, as noted above, because the use of addressable bus communications system will slow and delay the deployment of a vehicle airbag, it would be counter-intuitive and not obvious to combine the “Osmer” and “Rudduck” references.

In contrast to the “Osmer” reference, the present invention provides for avoiding slowing and delaying of the deployment of a vehicle airbag. The present invention relies on the transmission of one or more measured values from the same connecting element to the control unit, the transmission of which is initiated by a request message from the control unit. Transmitting several measured values from the same connecting element to the control unit requires less overhead and uses less bandwidth so as to improve vehicle airbag deployment time and calculation accuracy from multiple sensor values.

Moreover, claim 17, which has been amended herein without prejudice to include the subject matter of canceled claim 18, recites “sending the at least one connecting element a request message from the control unit; and transmitting from the connecting element a measured value to the control unit as a function of the request message.” The Office Action refers to paragraph [0031] of the “Osmer” reference as assertedly disclosing these features. However, while the cited paragraph may refer to force measurements, it does not disclose or suggest sending of a request message to a connecting element or transmission of a measured value as a function of such a message.

For all of the foregoing reasons, the combination of the “Osmer” and “Rudduck” references does not disclose or suggest all of the features of claim 17, so that the combination of the “Osmer” and “Rudduck” references does not render claim 17 unpatentable.

Regarding claim 19, the Final Office Action admits that the “Osmer” reference does not disclose a bus system having a single-wire bus. Instead, the Office Action relies on paragraph [0007] of the “Rudduck” reference for the disclosure of the single-wire bus. As explained in detail with respect to claim 11, the “Osmer” reference transmits analog signals over a wire harness 58 to air bag controller 36, where the “voltage level of each resistor can

be correlated to a specific weight at each sensor location.” See the “Osmer” reference, paragraph [0031] and Fig 1. Replacing the wire harness 58 with a single wire bus is not feasible due to the signals being analog in nature and not digital; nor is there a need to replace the analog communications in the “Osmer” reference as analog data from each sensor is continuously available to the controller. The “Rudduck” reference does not cure this defect because it deals with digital addressing of fasteners. Thus, the combination of the “Osmer” and “Rudduck” references does not disclose or suggest each feature of claim 19.

Notwithstanding the above, to facilitate matters, applicant has amended claim 19 to recite that the connecting elements record weight measurement related data as directed by the control unit. The additional functionality of having the connecting elements record weight measurement related data as directed by the control unit is not discussed in any of the cited references. For this additional reason the combination of the “Osmer” and “Rudduck” references does not disclose or suggest all of the features recited in claim 19.

Thus, the combination of the “Osmer” and “Rudduck” references does not render unpatentable claim 19 or its dependent claim 20.

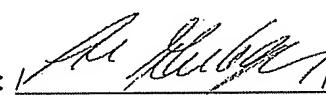
Withdrawal of this obviousness rejection of claims 17 to 20 is therefore respectfully requested.

V. Conclusion

In light of the foregoing, it is respectfully submitted that all of the presently pending claims are in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited.

Respectfully submitted,

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By:  (Reg. No. 59,210) for:
Gerard Messina
Reg. No. 35,952

KENYON & KENYON LLP
One Broadway
New York, New York 10004
(212) 425-7200

CUSTOMER NO 26646